Unit 5 Data Modelling– Example Data Model Scenario

You are working for East Berkshire Plumbing and Heating Services (EBPHS). They operate a main office with several members of staff, and a dozen engineers who are sent out on jobs each day. The job schedule is currently be recorded in a paper-based system that tracks what jobs are carried out by engineers on a particular day. Jobs can be paid for immediately (paid) or the customer can pay later (pending).

They have a second paper-based system that tracks company expenditures and expenses.

The company wants to store all this information in one place so that they can produce a single report that tracks total income, pending income, total expenditure and total profit.

The company is required to pay HMRC a corporation tax of 20% on all profits that are based on paid for income ***only***.

The company wants you to design a spreadsheet data model that allows EBPHS to track income and expenditure and predict their corporation tax payments to HMRC. In addition, the company want to use this model to work out how to keep their tax payments under £1000.

The company wants as much of the spreadsheet to be as automated as possible. The company wants the sheet to clearly identify inputs and outputs and be as easy to use as possible.

The company wants the sheet to minimize user error where possible.

In addition, the company wants the sheet secured so that only company employees can use it.

The company has identified that it wants four worksheets:

- Worksheet 1 – The Job Sheet.
- Worksheet 2 – The Expenses Sheet.
- Worksheet 3 – The Summary Sheet.
- Worksheet 4 – The Data Sheet.

Details about each worksheet are given on the following pages.

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Worksheet 1 – The Job Sheet.

This job sheet will track the following data:

Job Code, Job Description, Job Date, Number of Hours, Hourly Cost, Total cost, Paid.

Each job will have a cost and a number of hours. A job must be at least 1 hour.

Paid can be either ***YES*** or ***PENDING***.

You will need to validate all data where possible.

You will need to automate any data import or calculations.

You will need to make the sheet easy to use.

You have been given the following sample data:

Job Code	Job Description	Job Date	Number of Hours	Hourly Rate	Total Charge	Paid
BS_001	Boiler Service	01/06/2020	2	£50	£100	YES
NI_002	New Underfloor Heating installation	01/06/2020	20	£120	£2400	YES
NI_002	New Underfloor Heating installation	01/06/2020	50	£120	£6000	YES
NI_001	New Boiler Installation	02/06/2020	10	£75	£750	PENDING

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Worksheet 2 – The Expenses Sheet

This will record all the expenses the company spends with an associated Code. Some expenses will need to have extra tax added.

You will need to import any data where possible.

You will need to validate any data. Expenses are currently the only ones listed and the costs are fixed. The tax codes may change each year.

You will need to automate any calculations.

You will need to make the sheet easy to use.

You have been given the following sample data:

Expense	Cost	Date	Code
Printer Toner	£700	01/06/2020	1AA
Office Gas	£1000	01/06/2020	2AA
Office Electricity	£1000	01/06/2020	2AA
Office Phone Bill	£750	01/06/2020	1BB
Extras	£2500	01/06/2020	1BB

Worksheet 3 – The Summary Sheet.

This sheet will calculate the following totals:

- Basic Total Income – Paid
- Basic Total Income – Pending
- Basic Total Expenses
- Total Expenses Tax
- Final Total Expenses
- Actual Profits – profits on all Paid for Income
- Corporation Tax – 20% on all profits. If this drops below 0, display 0.

You will need to import any data where possible.

You will need to validate any data.

You will need to automate any calculations.

You will need to make the sheet easy to use.

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Worksheet 4 – The Data Sheet

You have been given the following sample data to use in your automations:

Job Code	Job Description	Hourly Rate
BS_001	Boiler Service	£50
PF_001	Power Flush Central heating clean	£30
NI_001	New Boiler Installation	£75
NI_002	New Underfloor Heating installation	£120

Tax Code	Tax
1AA	10%
2AA	15%
3AA	20%
1BB	0%

NOTE: although the whole spreadsheet can be edited by the company, EBPHS wants this sheet to be password protected with the code 12345.

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